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THE OZOPHORINI OF THE WESTERN UNITED STATES AND BAJA CALIFORNIA (HEMIPTERA: LYGAEIDAE)

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Abstract.—Nine species of Ozophorini from the Western United States and Baja California are treated, with a key and distributional records presented. Two species, *Ozophora occidentalis* and *O. salsaverdeae* are described as new. The status of species in the *Ozophora picturata* species group is discussed in detail.

The genus *Ozophora* is a large, complex taxon. Ashlock and Slater (1982) list 36 species in the genus. There are many Neotropical species yet undescribed.

Most species and genera of Western Hemisphere Ozophorini are Neotropical. The species present in the United States for the most part represent a northern extension of elements of this fauna. Within the United States two essentially distinct faunas are present. The first is largely confined to Florida. Its species are conspecific with, or similar to, those found in the Caribbean and the eastern lowlands of Mexico and Central America. The second occurs in the southwestern United States from Texas and Kansas westward to the Pacific Coast. This fauna is similar to that found on the Mexican Plateau.

There is, however, one species complex which occurs primarily in the United States and extends southward only into northern Mexico. I call it the "*picturata*-group." The study was originally undertaken to attempt to understand the relationships of the components of this group.

However, included in the paper are all of the species of Ozophorini that are at present known to occur in the western United States. The fauna consists of seven species of *Ozophora* and one species of *Balboa.* Students should be able to identify all of the species of the tribe presently known to occur in the United States by using this paper and that of Slater and Baranowski (1984) which treats the Floridian fauna. A species as yet known only from Baja California is also included primarily to clarify its relationship to *Balboa ampliata* Barber.

All measurements in this paper are in millimeters.

KEY TO SPECIES OF OZOPHORINI OF THE WESTERN UNITED STATES

2(1). Lateral margins of, at least, anterior pronotal lobe sharply acute, with a knife-like edge 2

– Lateral margins of pronotum bluntly produced, edge obtusely ridged, "calloused," not sharply acute and knife-like 5

2(1). Dorsal coloration almost uniformly dark brown 3

– Dorsal coloration pale yellow, or variegated 4

3(2). Lateral margins of corium with a distinct stridulitrum present; lateral margins of pronotum evenly convex ..... *Balboa ampliata*
– Lateral margins of corium with uneven surface but lacking a distinct stridulitrum; lateral margins of pronotum deeply, concavely sinuate ..... *Ozophora unicolor*
4(2). Body coloration variegated, with a conspicuous pale macula present distally on each corium; humeral angles of pronotum "notched"; metathoracic scent gland auricle elongate, curving in an even arc to reach at least middle of metapleuron ..... *Ozophora consanguinea*
– Body uniformly bright yellow lacking any variegation of color and completely lacking a differentiated pale macula distally on corium; humeral pronotal angles evenly rounded; metathoracic scent gland auricle short, finger-like, not arcuately curving and not extending completely over inner ½ of metapleuron ..... *Ozophora angustata*
5(1). Very small species, considerably less than 5 mm in length; posterior meeting of bucculae U-shaped ..... *Ozophora maculata*
– Larger species, 6 mm or more in length; posterior meeting of bucculae V-shaped .. 6
6(5). Body very elongate and slender, length of body 16 or more times interocular distance ..... *Ozophora depicturata*
– Body relatively much shorter, length of body less than 14 times interocular distance 7
7(6). Posterior pronotal lobe with a narrow pale median streak running through dark central "ray"; apex of corium usually marked with crimson; fourth antennal segment with a large white basal annulus ..... *Ozophora picturata*
– Posterior pronotal lobe with median area completely dark brown; apex of corium lacking a crimson mark; fourth antennal segment with or without a white basal annulus 8
8(7). Fourth antennal segment uniformly or almost uniformly dark brown; mean length of fourth antennal segment more than 1.3 mm (Fig. 1) ..... *Ozophora salsaverdeae*
– Fourth antennal segment with a conspicuous pale basal annulus; mean length of fourth antennal segment less than 1.15 mm (Fig. 1) ..... *Ozophora occidentalis*

THE *PICTURATA* GROUP

The taxonomic relationships of the members of this complex present a most interesting problem. I recognize three species, but suggest that additional study is needed to see if populations are reproductively isolated, or if intermediate populations occur.

Throughout the eastern United States (including part of Florida), west into northern Mexico and eastern Texas (northern limits in the west not well understood) occurs a rather homogeneous population recognizable by the possession of a broad white subbasal annulus on the fourth antennal segment, a crimson tinge at the apex of the corium, a complete broad dark brown strongly contrasting transverse fascia across the middle of the hemelytra, and a narrow pale streak in the middle of the dark median "ray" on the posterior pronotal lobe. This is the species described by Uhler as *picturata* from Massachusetts.

From eastern Kansas, southern and central Texas westward through Arizona, and into extreme southeastern California occurs a somewhat smaller population recognizable by its completely dark brown fourth antennal segment, lack of crimson coloration on the corial apex, completely dark brown median ray on the posterior pronotal lobe, and relatively pale brown hemelytron in which the transverse fascia is obscure and frequently interrupted laterally (Fig. 3). This is the species described below as *salsaverdeae.*

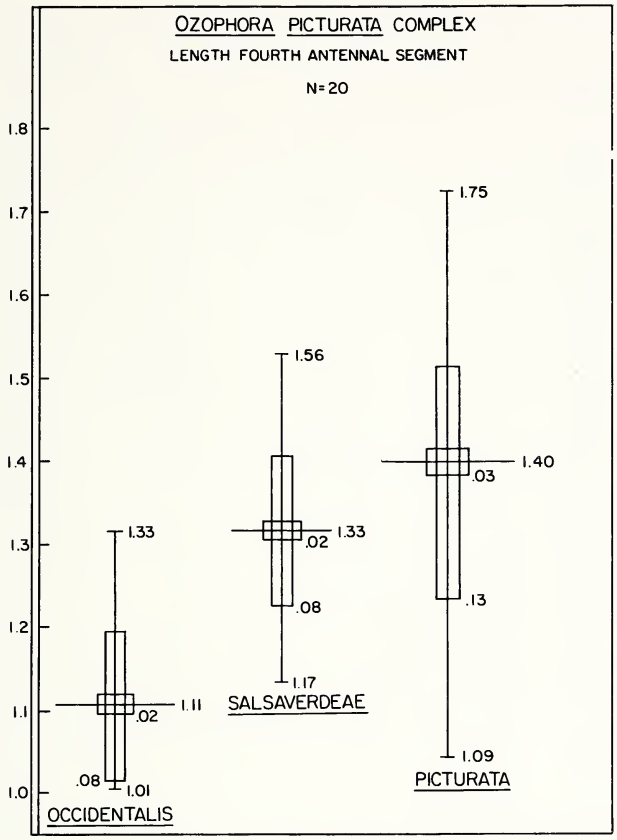

Fig. 1. Relative lengths of fourth antennal segment of *Ozophora picturata, O. salsaverdeae,* and *O. occidentalis.*

In California west of the desert and the Sierra Nevadas and extending northward into British Columbia occurs a population that resembles *salsaverdeae* in size and shape, in having a completely brown median posterior pronotal ray, in lacking a crimson corial apex, and in having an obscure reduced transverse hemelytral fascia. This population has a distinct white annulus on the fourth antennal segment. The fourth antennal segment is appreciably shorter than that of *picturata* (Figs. 1, 2). The white annulus is only one-half to one-fourth as long as that found in eastern *picturata.* This is the species described below as *occidentalis.*

The genital capsules and parameres of these populations show some differences, but are variable and do not seem to offer reliable differentiating characteristics.

The presence or absence and size of the white annulus on the fourth antennal segment is an almost constant feature, although occasionally in *salsaverdeae* there is an obscurely paler area near the base of the segment. The presence or absence of a pale streak mesally in the dark median ray on the posterior pronotal lobe is difficult

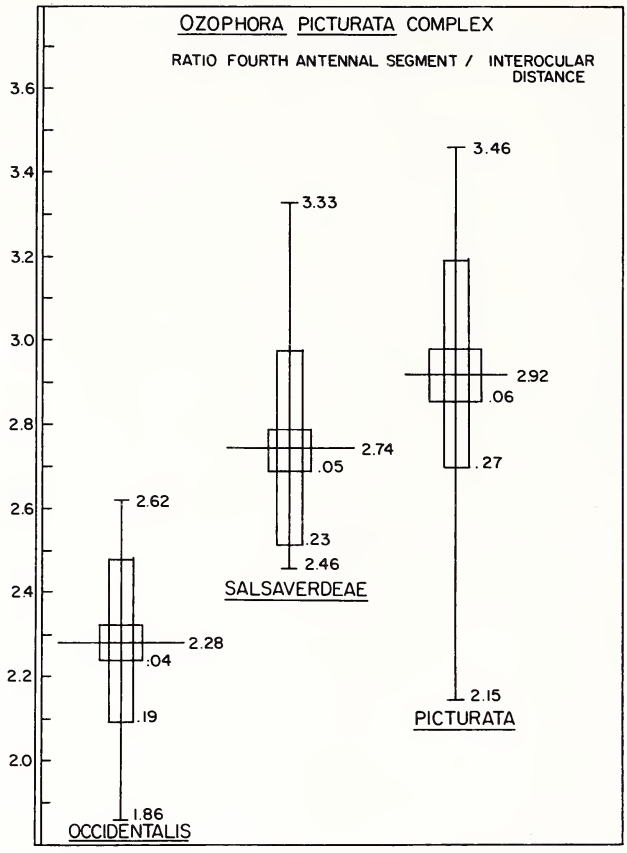

Fig. 2. Ratio of length of fourth antennal segment to interocular distance of *O. picturata, O. salsaverdeae,* and *O. occidentalis.*

to use in pale specimens where the rays themselves are obscure. The crimson mark at the apex of the corium appears to fade (perhaps with age or with preservation in alcohol). In any event it is not an absolutely constant feature. The transverse fascia is variable and in some western specimens where the entire hemelytron is relatively obscurely colored it is difficult to determine whether the fascia is complete or incomplete. This is the most difficult "distinguishing" feature to use, and although useful when one becomes familiar with the different taxa, it is difficult to define in a meaningful way.

The essential problem is to determine what taxonomic status should be assigned to populations of "*picturata,*" "*salsaverdeae,*" and "*occidentalis.*" Although they are for the most part allopatric, there are no constant genitalic differences and there is overlap in the absolute length and relative length of the fourth antennal segment (Figs. 1, 2). These facts suggest that they might well be considered as subspecies in the traditional sense of the term. I believe the weight of evidence indicates that recognition as distinct species is preferable for the following reasons. (1) In Texas

typical "eastern appearing" populations of *picturata* occur well west of typical specimens of *salsaverdeae.* (2) Typical eastern *picturata* individuals are known from northern Mexico whereas specimens from several localities in Texas along the eastern Rio Grande Valley (including Brownsville) are typical *salsaverdeae.* Thus "typical" *salsaverdeae* occurs geographically between the Mexican *picturata* population and the main range of *picturata.* (3) In the area around Brazos County, Texas both *picturata* and *salsaverdeae* occur without any evidence of intergradation. (4) A breeding population of *salsaverdeae* with no suggestion of *picturata* characteristics occurs in extreme eastern Kansas (Lawrence). This pattern scarcely suggests a subspecific taxon. (5) I have examined 4 specimens (3♂♂, 1♀) taken in the Huachuca Mountains ("Cochise Co., Upper Miller Cyn. 6,000–7,000', Huachuca Mts. 8.VIII.1974, J. Powell, under bear scats") that probably represent an isolated western population of *picturata.* That these specimens are all submacropterous makes comparison with other specimens of *picturata* difficult since the species has previously been known to exist only in the macropterous condition. These specimens have a noticeably reduced posterior pronotal lobe (a condition frequently associated with wing reduction) and the scutellum lacks the diagonal pale vittae that are usually present in *picturata.* The scutellum of these Miller Canyon specimens is paler on the posterior portion than it is anteriorly. In several specimens of *picturata* from Texas the pale vittae tend to coalesce to form a similar condition. It is also true that Texan and Mexican specimens of *picturata* tend to have a somewhat narrower pronotum than is generally true of specimens from eastern North America.

The fourth antennal segments of the Miller Canyon specimens have a large white basal annulus and both the segment and the white annulus are much more elongate than is true of *occidentalis.* In addition, the meson of the posterior pronotal lobe has a narrow pale streak which is characteristic of *picturata* and which is not found in either *salsaverdeae* or *occidentalis.*

These are particularly important specimens for two reasons. First, they establish the presence of *picturata,* at high elevations at least, far west of where it has previously been known, thus considerably strengthening my conclusion that *salsaverdeae* is a distinct species and not a geographic race. Second, these are the only specimens of the *picturata* complex that have reduced wings (which once again emphasizes the importance of collecting *in situ* and at high elevations).

I recognize the preliminary nature of this analysis. The samples do not represent a complete picture of the geographic range of these taxa. We do not have any information on genetic compatibility, and while we do know something of the biology of *picturata* we do not have any information other than brief habitat notes about *salsaverdeae* or *occidentalis.* The evidence at hand suggests that we are dealing with distinct species and they are so treated in this paper.

Ozophora picturata Uhler

Ozophora picturata Uhler, 1871:102–103.

Discussion. This species has much the same color pattern as described for *salsaverdeae* and *occidentalis* except that the pale and dark areas of the dorsal surface of the body are usually strongly contrasting. As noted in the key and general discussion,

picturata usually has a crimson corial apex and a pale median streak on the central dark ray of the posterior pronotal lobe.

The white annulus on the fourth antennal segment is always large, white, and in strong contrast to the dark distal portion of the segment.

This is the only ozophorine found over most of the eastern and central United States. Sweet (1964), who has studied its biology in Connecticut finds it to be the only seed feeding lygaeid living in the climax oak-hickory community of the northeastern United States. Its habits in the southern and western parts of its range are unknown. Slater and Baranowski (1984) describe the fourth and fifth instar nymphs.

Distribution. O. picturata is distributed throughout the eastern and central United States from Maine to Florida and westward to northern Mexico, Arizona, Texas, Oklahoma and Kansas. Slater (1964) lists it from Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Maryland, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, Texas, Ontario and Mexico.

Material examined. From new areas in the United States and Mexico as follows: ALABAMA: Gulf Shores St. Pk., Flash Is., end Hwy 6 (Baldwin Co.). ARKANSAS: Magazine Mt. (Cameron Bluff). MAINE: Camden. MISSISSIPPI: Gulfport, 1 mi SE Ecru (Pontotoc Co.). Starkville. 6 mi SW Starkville. Adaton. nr. Craig Springs (Oktibbeha Co.). nr. Thaxton, Benson Farm, 3 mi WSW Sardis (Panola Co.). 2 mi N Waveland, Bayou la Croix (Hancock Co.). Monroe Co. Yalabusha Co. Ocean Springs. Gulf Is. Natl. Sea. [shore] (Jackson Co.). OHIO: Silver Lake (Logan Co.). Spencer Twp. (Lucas Co.). Lake Texoma (3 mi E Willis). TENNESSEE: Cumberland Co. VIRGINIA: Lake Drummond. Vienna. MEXICO: 15 & 16.5 mi W Linares (Nuevo Leon); Cacaheramilpa Cave (Guerrero).

Although *picturata* has been reported previously from Texas and Mexico (see Slater, 1964), some of these records probably were based upon other species. The following are definite *picturata* records: TEXAS: College Station (Brazos Co.). Bastrop. Sinton. Garner St. Park (Uvalde Co.). 3 mi E Old Dime Box (Burleson Co.). Navasota. Goose Island State Park (Aransas Co.). Palmetto State Park (Gonzales Co.). Dimit Co. Pt. Laraea, Chisos Mts. (Brewster Co.). Wilder Wildlife Refuge (San Patricio Co.). Harlingen (Val Verde Co.). Dolan Creek Camp Ground (Lee Co.). Giddings (Comanche Co.) nr. Proctor.

The records of *picturata* from Arizona by Snow (1904, 1906) are presumably referable to *salsaverdeae,* that of Johnson and Ledig (1918) to *occidentalis.*

The record of Gibson (1919) from Dominica and that of Gibson and Carrillo (1959) from Mexico cannot be placed without reexamination of specimens but certainly do not belong to *picturata.*

Ozophora salsaverdeae, new species
Fig. 3

Description. General coloration dull straw yellow. Head, anterior pronotal lobe and scutellum dark red brown. Posterior pronotal lobe with an obscure median and two sublateral dark brown longitudinal stripes or rays present; those midway between meson and lateral margins not reaching posterior margin of pronotum; median ray completely dark brown lacking a pale median streak. A pair of dull yellow divergent scutellar vittae present; extreme apex of scutellum white. Corium nearly uniformly pale brownish-yellow, but with obscure brown maculae as follows: large dark corial

Fig. 3. *Ozophora salsaverdeae* new species. Dorsal view.

apex, a small rectangular patch along radial vein at level of apex of scutellum, a more or less complete but obscure transverse fascia, this including a dark macula on explanate marginal area that reaches lateral margin (these markings in areas similar to those of many species of *Ozophora* but extremely obscure in this species). Ap-

pendages largely pale yellow. Distal end of third antennal segment and all of segment four dark brown. Posterior femora with a weakly developed subdistal dark annulus.

A few scattered, short, but upright hairs present on dorsal surface.

Head non-declivent; tylus at most attaining middle of first antennal segment; vertex moderately convex. Length head 1.0, width 0.96, interocular space 0.46. Pronotum with lateral margins sinuate; posterior margin straight; transverse impression complete but shallow mesally. Calli of anterior pronotal lobe impunctate, shining; areas laterad of calli pruinose. Length pronotum 1.02, width 1.58. Scutellum with pale laevigate oblique vittae confined to posterior half, coalescing at posterior ends. Length scutellum 0.88, width 0.80. Hemelytra gradually broadening posteriorly so that maximum width is at a level slightly caudad of posterior end of claval commissure. Length claval commissure 0.86. Midline distance apex clavus-apex corium 1.40. Midline distance apex corium-apex membrane 0.54. Metathoracic scent gland auricle elongate, slightly curving posteriorly. Fore femora armed below with three major spines. Labium reaching well between metacoxae, first segment reaching base of head. Length labial segments I 0.92, II 0.98, III 0.74, IV 0.42. Length antennal segments I 0.74, II 1.60, III 1.16, IV 1.40. Total body length 6.08.

Holotype. ♂, TEXAS: Jeff Davis Co., 1 mi W Ft. Davis, 15 August 1965 (at light) (J. C. Schaffner). In American Museum of Natural History.

Paratypes. ARIZONA: 2♀♀, Pepper Sauce Canyon, 15.VIII.1921, Santa Catalina Mts. (E. P. Van Duzee). 1♂, 1♀, Patagonia, Santa Cruz Co., 19.VI.1964 (uv light) (D. R. Smith & C. W. Baker). 1♂, Bradsh Mt., 21.VI.1942. 1♂, Patagonia, Santa Cruz Co., 27.VII.1956 (C. W. O'Brien). 3♂♂, 4♀♀, Patagonia, 3.VIII.1924 (E. P. Van Duzee). 2♂♂, 2♀♀, Pena Blanca Lk, 16 mi NW Nogales, Santa Cruz Co., 26.VII.1964 (uv light) (D. R. Smith & C. W. Baker). 2♂♂, 2♀♀, 14 mi E Oracle, 27.VII.1924 (E. P. Van Duzee). 2♂♂, 17♀♀, Oak Creek Canyon, 6 mi N of Sedona, 21.VII.1958 (at light) (C. W. O'Brien). 1♀, 10 mi N Sedona, Oak Creek Canyon, 20.VIII.1957 (C. W. O'Brien). 3♀♀, Noah Creek, Graham Mts. & Co., 4.VIII.1958 (light trap) (C. W. O'Brien). 1♂, same except 31.VII.1957. 3♂♂, Cochise Stronghold, Dragoon Mts., 29.VII.1957 (C. W. O'Brien). 1♀, same except 13.VIII.1958. 5♂♂, 4 ♀♀, Madera Canyon, Santa Cruz Co., 15.VII.1963 (V. L. Vesterby). 3♂♂, 2♀♀, Sabino Canyon, Santa Catalina Mts., 11.VII.1957 (at light) (C. W. O'Brien). 1♀, Prescott, 8.VII.1917 (C. A. Hill). 1♀, Washington Mts., nr. Nogales, 7.IX.1927 (J. A. Kusche). 1♂, Carr Canyon, Huachua Mts., 7.VII.1930 (J. O. Martin). 1♀, near Tucson, Pima Co., 8.VII.1957 (at light) (C. W. O'Brien). 1♀, Tucson, 15.III.1937 (Bryant) "13." 1♀, Santa Rita Mts., 5,000–8,000 ft, "VI" (F. H. Snow). 1♀, Rustler's Park, Chiricahua Mts., 6.VIII.1958 (R. E. Rico). 1♂, Cactus, 1.IX.1952 (N. T. Davis). 1♀, St. Xavier Mts., Tucson, 29.VII.1924 (J. O. Martin). 1♀, Santa Catalina Mts., 18.IV.1937 (Bryant). 3♂♂, 2♀♀, 10 mi E Apache, Peloncillo Mts., Cochise Co., 15.VIII.1972 (R. F. Denno, K. Yeargan, J. R. Bennedict). 1♂, 5 mi W Portal, 5,400 ft, Cave Creek Canyon, Chiricahua Mts., Cochise Co., 7.VII.1956 (M. Cazier). 1♀, same except 19.VII.1956. 1♀, same except 4.VIII.1956, (C. and M. Cazier). 1♀, same except 22.VI.1957, (M. Statham). 1♀, same except 4.VII.1957. 1♂, same except 1.VIII.1957. 1♀, same except 1.VII.1959. 1♀, same except 11.VII.1959. 1♀, same except 15.VII.1959. 1♀, same except 6.VII.1957 (Berlese trap) (C. W. O'Brien). 1♀, same except 10.VIII.1957. 1♀, same except 25.VI.1958 (M. A. Cazier). 1♂, same except 8.VIII.1958. 1♀, same except 22–23.VII.1960 (C. and M. Cazier). 1♂, same except (at light) 15.VII.1960 (J. M. Linsley). 1♂, same except

9.VIII.1961 (J. F. Lawrence). 1♀, same except 28.IV.1962 (J. A. Woods). 1♂, 1♀, same except 16.VII.1964 (W. J. Gertsch, J. A. Woods). 1♂, 1♀, same except 17.VII.1964 (J. A. Woods). 1♀, same except 14.VI.1965 (J. H. Davidson, J. M. Davidson, M. A. Cazier). 1♂, same except 20.VII.1970 (M. H. Muma). 6♂♂, 5♀♀, Molino Basin, Sta. Catalina Mts., Pima Co., 2.VIII.1970 (J. Powell, P. Rude). 1♂, 3♀♀, Stewart Camp 1 mi S Portal, Cochise Co., 18–20.VII.1971 (light trap) (J. T. Doyen). CALIFORNIA: 1♂, 2♀♀, Wild Rose Canyon, Death Valley National Monument, Inyo Co., 7.XI.1957 4,000 ft (*Neotoma* nest of wild rose and willow) (R. E. Ryckman, J. P. Fonseca). COLORADO: 1♀, Denver, 29.III.1963 (J. T. Polhemus). KANSAS: 1♂, Salina, SA Co., 9–14.IX.1973 (H. D. Engleman). 2♂♂, 1♀, Mead Co. St. Lake and Park, 25.VII.1978 (at light) (A. Slater, S. W. Hamilton). 1♀, Douglas Co., Lawrence, 21.VI.1970 (P. D. Ashlock). 1♀, same except 8.IX.1979 (A. Slater). 1♀, same except 23.IX.1979 (P. D. Ashlock). 1♂, 1♀, same except 24.VI.1980. 1♂, 2♀♀, same except 30.VI.1980. NEW MEXICO: 1♀, Big Dry Creek, Grant Co., 10.IX.1933 (H. S. Gentry). TEXAS: 1♀, Ft. Davis, 27–29.VIII.1962 (H. R. Burke). 1♂, 5♀♀, Ft. Davis, Limpia Canyon, 20.VI.1964 (M. H. Sweet). 9♂♂, 11♀♀, Jeff Davis Co., 1 mi W Ft. Davis (at light) 15.VIII.1965 (J. C. Schaffner). 1♂, same except 16.VIII.1965. 1♂, 1♀, same except 22.VIII.1968 (J. E. Hafernik). 1♂, Ft. Davis State Pk., 23.VIII.1969 (Board and Hafernik). 2♂♂, 1♀, Cameron Co., Brownsville, 12.VI.1968 (V. V. Board). 1♀, same except 12–14.VI.1969. 1♀, Seguin, 9.V.1964 (J. C. Schaffner). 1♀, Brewster Co., 9 mi W Alpine, 17.VIII.1969 (at light) (J. C. Schaffner). 1♂, 1♀, Basin, Big Bend Nat'l Pk., Brewster Co., 14.VII.1950 (Ray F. Smith). 1♂, 1♀, Chisos Mts., Big Bend Park, 4.VI.1942 (H. H. Scullen). 2♂♂, 3♀♀, Shafter, 6.VIII.1964 (H. R. Burke and J. Apperson). 1♂, 1♀, Hildago Co., Bentsen-Rio Grande St. Pk., (at light) 10.VI.1975 (R. Turnbow). 6♂♂, 9♀♀, Rio Grande State Park, Mission, 3.II.1964 (M. H. Sweet). 1♂, same except 10.VI.1966. 2♂♂, 4♀♀, Mission, 29.V.1965 (M. H. Sweet). 1♂, Pine Springs, Culberson Co., 18.VIII.1970 (C. W. O'Brien). 1♀, College Station, Brazos Co., 9.X.1964 (M. H. Sweet). 1♂, 1♀, Palo Duro Canyon St. Park, Randall Co., 31.VII.1965 (M. H. Sweet). 1♂, 1♀, Sinton, 31.VIII.1964 (M. H. Sweet). 1♀, Uvalde Co., Sabinal (black light), 28.VI.1964 (D. R. Smith & C. W. Baker). MEXICO: 1♂, Jalisco, Puerto Vallarta, 11–15.VI.1963 (P. R. Grant). 1♀, "Nog. 65069, 14585, 28.VIII.1946 (with bamboo stalks)." 1♀, Zacatecas Concepcion del Oro, 8.VII.1983 (at light) (Kovarik, Harrison, Schaffner). 5♂♂, 3♀♀, Durango, Nombre de Dios, Rio Melones, 17.VIII.1977 (H. Brailovsky). 3♂♂, Tamaulipas, CD. Victoria, 17.XI.1977 (H. Brailovsky). In American Museum of Natural History, California Academy of Sciences, California Department of Food and Agriculture (Sacramento), Texas A&M University, University of California at Berkeley, University of California at Davis, Instituto de Biologia Universidad Nacional Autonoma de Mexico, United States National Museum, P. D. Ashlock, D. Engleman, G. G. E. Scudder, A. Slater, and J. A. Slater collections.

Discussion. This species resembles the much more elongate *depicturata* in color. As in that species, the degree of differentation between the pale and dark areas can be quite variable. Frequently the oblique pale vittae on the scutellum are not confluent posteriorly as they are on the holotype. In dark specimens the longitudinal rays on the posterior pronotal lobe are strongly developed. On such specimens the lateral pronotal rays form a "loop," as they do in many species of *Ozophora,* but the central dark ray does not have a pale median line. In a few specimens the distal end of the

second antennal segment is darkened, as is the third. The membrane varies from almost completely pale (only the base darkened) to almost completely dark with only the apex pale.

Although this species is clearly a member of the *picturata* complex, its pale coloration may cause it to be confused with *O. depicturata*. *O. salsaverdeae* can readily be distinguished from *depicturata* by the uniformly dark fourth antennal segment, and by its shorter stouter body.

Ozophora occidentalis, new species

Description. General form and color as in *salsaverdeae*. Antennal segments I and II uniformly yellow, segment III becoming dark chocolate brown on distal end; segment IV with distal three-fourths chocolate brown strongly contrasting with a narrow basal white or pale yellow annulus. Indistinct dark rays present on posterior pronotal lobe. Scutellum dark brown with strongly contrasting oblique vittae, latter not confluent posteriorly. Hemelytra colored as in *salsaverdeae,* apex of corium with a conspicuous dark macula, lacking a crimson colored apex.

Body vestiture and shape including widened area of corium, shape of metathoracic scent gland auricle, fore femoral spines and relative length of labium as in *salsaverdeae*. Length head 1.0, width 0.90, interocular space 0.48. Length pronotum 0.92, width 1.44. Length scutellum 0.82, width 0.76. Length claval commissure 1.0. Midline distance apex clavus-apex corium 1.20. Midline distance apex corium-apex membrane 0.80. Length labial segments I 0.84, II 0.88, III 0.64, IV 0.44. Length antennal segments I 0.70, II 1.46, III 1.10, IV 1.14. Total body length 5.76.

Holotype. ♂, CALIFORNIA: Los Angeles County, Glendale, 30.VIII.1978 (S. Thurston). In American Museum of Natural History.

Paratypes. CALIFORNIA: 5♂♂, 10♀♀, same data as holotype. 1♂, 2♀♀, N Fork, San Antonio River, 0.7 mi S Indian Ranger Station, Monterey Co., 29.IV.1961 (E. Lindquist). 2♀♀, Carrville, Trinity Co., 20.VI.1951 (E. C. Van Dyke). 2♂♂, 1♀, Trinity Co., Douglas City, 21.VI.1977 (T. R. Haig). 1♂, 3♀♀, Trinity Co., Douglas City, 23.I.1980 (T. R. Haig). 2♀♀, Trinity Co., Del Loma, 6.X.1977 (*Alnus* duff) (T. R. Haig). 1♂, 11♀♀, Trinity Co., Del Loma, 23.II.1978 (T. R. Haig). 1♂, 2♀♀, Shasta Co., 3 mi. S Castella, 14.V.1980 (from oak duff) (T. R. Haig). 1♂, 1♀, Shasta Co., Redding, 1.III.1970 (T. R. Haig). 1♂, same except 1.VII.1974. 1♀, same except 1.IV.1979. 1♂, same except 11.VI.1979. 1♂, Shasta Co., Buckhorn Summit, 18.IV.1981 (T. R. Haig). 1♂, 1♀, same except 9.V.1982. 1♂, 2♀♀, 11 mi W Redding, Shasta Co., 21.XII.1966 (J. S. Buckett, M. R. & R. C. Gardner). 1♀, Riverside Co., Hwy. 395, 55 mi SW Riverside, 2.III.1956 (I. Newell). 1♂, 2♀♀, Davis, Yolo Co., 1.VII.1970 (S. R. Sims). 1♀, Davis, 7.IX.1942 (R. L. Usinger). 1♀, Santa Barbara, Santa Barbara Co., 1967 (V. Roth). 1♂, Colton, 13.I.1910 (G. R. Pilate). 1♂, Wildcat Cyn., San Diego Co., 28.IV.1962 (S. C. Williams). 1♀, Alum Rock Park, Santa Clara Co., 5.IV.1957 (F. Santana). 1♀, Santa Clara Co., 8 mi S Palo Alto, 19.IV.1976 (oak litter) (Fred G. Andrews). 1♂, Santa Cruz Mts. (Koebele Collection). 1♀, Catalina I., 28.IV.—(Parshley Collection). 1♂, Carmel, 4.X.1928 (L. S. Slevin). 1♀, UC Hopland Fld. Sta. nr. H.Q. 880′, Mendocino Co., 22.V.1969 (malaise trap) (W. J. Turner). 1♂, San Juan Ht. Sp. (under dead bark). 11♂♂, 2♀♀, Butte Co., 4.XII.1972 (T. R. Haig). 7♂♂, 8♀♀, Butte Co., Chico, 2.V.1975 (T. R. Haig). 20♂♂, 19♀♀, Los Angeles Co., N Hollywood, 28.IX.1978 (I. Hoodkiss) ("Ex. Home" "78562"). 11♀♀, Contracosta Co., Moraga, 1–8.XII.1980 (D. Denning).

1♀, Contracosta Co., Moraga, 10–15.IX.1981 (D. Denning). 4♂♂, 2♀♀, Glenn Co., Butte City, 21.X.1975 (T. R. Haig). 3♂♂, same except 23.X.1975. 1♂, 9♀♀, Humboldt Co., Berry Summit, 17.XII.1973 (oak duff) (T. R. Haig). 1♀, Santa Paula, 16.II.1957 (W. E. Simonds). 1♂, Stanislaus Co., La Grange, 31.V.1970. 1♂, San Diego Co., 1 mi E Leucadia, 8.VII.1979 ("berlese from under oak") (K. W. Cooper). 1♀, Fresno Co., Fresno, 28.VI.1967 (C. Ferris). OREGON: 1♂, Yamhill Co., IV.1935. 2♀♀, 5 mi S Eugene, Fox Hollow Rd., Lane Co., 27.XI.1959 1,000 ft (D. R. Smith). 1♀, Nuddy Valley, Yamhill Co., 26.V.1957 (K. McKay-Fender). 2♂♂, 2♀♀, McMinnville, Yamhill River, 30.V.1958 (K. McKay-Fender). 1♀, McMinnville, 13.V.1957 (K. McKay-Fender). 1♀, McMinnville, 8.I.1958 (K. M. Fender). 1♀, 1 mi W Curtin, Douglas Co., 27.XI.1959 750′ (David R. Smith). 1♀, Corvallis, Benton Co., 7.X.1967. 1♂, Corvallis, Benton Co., 13.I.1960 garden litter (S. Radinovsky). 2♂♂, 1♀, hills NW Corvallis, Benton Co., 22.III.1958 (under bk. debris) (John D. Lattin). 3♂♂, 2♀♀, Scott's Hill 1 mi SW Corvallis, Benton Co., 10.III.1960 (moss & ground litter) (J. D. Lattin). 1♀, Slough 10 mi S Corvallis, Benton Co., 22.XII.1957 (ex. oak leaf litter) (B. Ainscouh). 1♀, Corvallis, Benton Co., 8.IV.1961 (ex. *Salix*). 2♂♂, S side Coffin Butte, Benton Co., 15.I.1959 (sod sample) 500′ (John D. Lattin). 1♂, Coffin Butte, 10 mi N Corvallis, 9.I.1958 (oak litter top of butte) (J. D. Lattin). 1♀, same except 9.I.1958 (bullrush litter). 2♂♂, same except 15.I.1959, 300′ (litter sample) (S. Radinovsky). 6♂♂, 2♀♀, Corvallis, 7.XI.67 (Paul Oman). 1♀, Corvallis, Oak Creek, 17.I.1959 (flood litter) (S. Radinovsky). 1♂, Corvallis, above Country Club, 31.X.1958 (ground litter) (John D. Lattin). 2♀♀, McDonald Forest, N of Corvallis, 3.XI.1949 (V. Roth). 1♀, 12 mi S Corvallis, 13.III.1949 (in moss) (V. Roth). 1♀, Corvallis, 13.I.1952 (on willow in trap) (V. Roth). 1♀, Sexton Mt. N of Grant Pass, Jackson Co., 26.V.1962 (K. M. Fender). 3♂♂, Spenser's Butte, 2 mi S Eugene, Lane Co., 23.XI.1959 (John D. Lattin). 2♂♂, 2♀♀, Creswell, 530′, Lane Co., 27.XI.1959 (ash litter) (David R. Smith). 2♂♂, 2♀♀, 3 mi E Lacomb, Crabtree Gd. Stn., Linn Co., 13.XII.1957 (oak litter) (J. D. Lattin). 1♂, Wasco Co., Sorosis Park the Dalles, 23.X.1968 (oak litter) (E. M. Fisher). NEVADA: 2♀♀, Reno, Washoe Co., 21.X.1958 (John Locke). BRITISH COLUMBIA: 1♂, Penticton, 22.IX.19— (W. Downes). 1♂, McKinney Rd. 1 mi E Oliver, 3.VI.1958 ("Malt trap") (H. & A. Howden). In American Museum of Natural History, United States National Museum, California Academy of Sciences, California Department of Food and Agriculture (Sacramento), University of California (Berkeley and Davis), University of British Columbia, Oregon State University, P. D. Ashlock, G. G. E. Scudder, and J. A. Slater collections.

Discussion. There is very little variation in the type series other than degrees of intensity of the dark coloration.

Although the biology has not been studied collection records suggest an association with oak litter.

Ozophora depicturata Barber

Ozophora depicturata Barber, 1928:266–268.

Discussion. Barber's original description of *depicturata* is detailed and is not repeated here. The transverse dark hemelytral fascia is usually very faint and at least partially obsolete in many Arizona specimens. The basal white annulus of the fourth antennal segment is stated by Barber to occupy the "basal half" of the segment. In

material examined (including two paratypes) it actually occupies only the basal one-third. Barber's discussion of relative lengths and widths are a little misleading since he apparently did not measure most areas. He says that the third and fourth antennal segmenta are subequal (but actually the fourth is longer than the third) and that the third and fourth segments are each "about" one-fourth shorter than the second segment (they are considerably longer than that—see measurements below). Barber states that the anterior pronotal lobe is about twice the length of the posterior. This must be a *lapsus* as the reverse is true. Sometimes only three ventral fore femoral spines are present.

Measurements (from female paratype "Huachuca Mts. Ariz. 26.VII.1905"): Length head 1.16, width 1.10, interocular space 0.50. Length pronotum 1.24, width 1.90. Length scutellum 1.14, width 0.98. Length claval commissure 1.10. Midline distance apex clavus-apex corium 1.80. Midline distance apex corium-apex membrane 1.32. Length labial segments I 1.20, II 1.30, III 1.06, IV 0.50. Length antennal segments I 0.86, II 2.12, III 1.72, IV 1.90. Total body length 7.52.

Barber noted that Arizona specimens in his type series were paler than those from southern California, and our observations support this. Most Mexican and Texas specimens have relatively strongly contrasting markings. In these specimens the transverse hemelytral fascia is strongly differentiated and the pale macula at the inner corial angle contrasts strongly with the dark surrounding surface. In some specimens, dark rays are visible on the posterior pronotal lobe. The median ray anteriorly usually has a very narrow median pale streak. The antennal coloration is almost constant. The first and second segments are uniformly pale, the third segment blackish-brown on the distal end and the fourth segment dark with a prominent white basal annulus.

Barber took specimens by sifting wood rat nests in both California and Arizona. Presumably the insects feed on the seeds present in the litter.

Distribution. Although previously known only from southern California and Arizona, *depicturata* has a much wider range extending into Texas and Mexico. I have also examined several specimens from Guatemala which are either conspecific or represent a very closely related species.

Material examined. ARIZONA: 1♀, Madera Canyon, Santa Cruz Co., 10.VII.1963 4,880 ft (V. L. Vesterby). 2♂♂, same except 11.VII.1963. 2♂♂, same except 12.VII.1963. 1♂, same except 13.VII.1963. 2♂♂, 4♀♀, same except 15.VII.1963. 1♀, same except 18.VII.1963. 1♂, 2♀♀, same except 23.VII.1963. 1♂, 3♀♀, same locality, 5–6.IX.1970 (black light) (E. A. Kane). 1♂, 1♀, American Museum South West Research Station, 5 mi W Portal, Cochise Co., 5,400 ft, 28.VI.1960 (J. M. Linsley). 1♀, Stewart Camp 1 mi S Portal, Cochise Co., 18–20.VII.1971 (black light) (J. T. Doyen). 1♀, Portal, Cave Creek Ranch, 22.VIII.71 (E. G. Linsley). 1♀, same except 29–30.VIII.1971. 4♂♂, 4♀♀, Molino Basin, St. Catalina Mts., Pima Co., 2.VIII.1970 (J. Powell, P. Rude). 2♂♂, Pepper Sauce Canyon, Santa Catalina Mts., 15.VIII.1924 (E. P. Van Duzee). 1♂, same except 16.VIII.1924. 3♂♂, 14 mi E Oracle, 24.VIII.1924 (E. P. Van Duzee). 1♂, Patagonia, 1.VIII.1924 (E. P. Van Duzee). 1♂, same except 2.VIII.1924. 2♀♀, Carr Canyon, Huachuca Mts., 7.VII.1930 (J. O. Martin). 1♂, same except 5,400′, 7.XI.19?5 (C. W. O'Brien). 1♀, Bryant, Santa Catalina Mts., 10.I.1940. 1♀, same except 28.VI.1940. 1♀, Sabino Canyon, Santa Catalina Mts., 11.VII.1957 (C. W. O'Brien). 1♂, same except 15.IX.1964 (L. & C. W. O'Brien). 1♀, Globe, 18.VII.1933 (Parker). 1♀, Cochise Stronghold, Dragoon Mts., 7.VII.1958 (C. W. O'Brien). 1♀, White Rock Cp., Pena Blanca Lake, Santa Cruz Co., 7.VII.1958 (L. & C. W. O'Brien). 1♂, Nogales,

20.IX.1933 (H. S. Gentry). 1♀, Cave Creek, Chiricahua Mts., Cochise Co., 5–6,000 ft, 25.VIII.1927 (J. A. Kusche). 1♀, Gila Co., Pinal Mts. 5,500 ft, 13–15.VIII.1977 (black light) (R. P. Allen, Duffy). CALIFORNIA: 1♀, Tanbark Flat, Los Angeles Co., 8.VI.1950 (B. Adelson). 1♂, Aliso Canyon, 6 mi SW New Cuyama, Santa Barbara Co., 9.VII.1965 (D. Bragg). 1♂, 8 mi N Ojai, North Fork Matilija Creek, Ventura Co., 2,000 ft, 21.V.1981 (L. Herman). 1♂, same except 9.VII.1965 (E. M. Omi). 1♂, 2♀♀, 4 mi W Los Prietos, Santa Barbara Co., 1.IX.1968 (white light) (P. & S. Opler). 1♂, Maricopa Co., 3 mi S Sunflower on Hwy 87, 7.IX.1983 (black light trap) (W. H. Cross). 2♀♀, Trinity Co., Del Loma, 6.X.1977 (berlese, *Alnus* duff) (T. R. Haig). 1♂, San Bernardino Co., 2 mi E Mt. Home Village, 7.X.1981 (berlese *Neotoma* nest under oak) (K. W. Cooper). 1♀, Kern Co., Lake Isabella, 4.7 mi S Woffold Heights, 25.X.1980 (A. R. Hardy). TEXAS: 1♂, Texas Experiment Station, Dimmit Co., 1.IV.1936 (S. E. Jones). 1♀, same except 18.III.1942. 1♂, Lange's Hill, Gillespie Co., 5.VI.1960 (Board & Hafernik). 1♀, Taylor, 11.IV.1965 (J. E. Hafernik). 1♀, Bryan, 13.IV.1965 (J. C. Schaffner). 1♀, Eagle Pass, 8.VIII.1959 (R. B. Selander, J. C. Schaffner). 1♀, Garner St. Park, Uvalde Co., 11.VI.1965 (M. H. Sweet). 1♀, Presidio, 8.VII.1968 (J. E. Hafernik). MEXICO: 1♂, Jalisco, Guadalajara, 20.XII.1963 (M. J. Tauber & C. A. Toschi). 14♂♂, 23♀♀, Nuevo Leon, 15 mi W Linares, 1–2.VII.1973 (Mastro & Schaffner). 34♂♂, 20♀♀, same except 27.VII.1978 (at light) (Plitt & Schaffner). 1♂, 4♀♀, Nuevo Leon 16.5 mi W Linares, 22–24.VII.1977 (R. Peigler, D. Plitt). 12♂♂, 14♀♀, same except 23.VII.1976 (at light) (Peigler, Gruetzmacher, R. & M. Murray, Schaffner). 1♀, Nuevo Leon, 20 mi S Monterrey, 17.XI.1946 (E. C. Van Dyke). 1♀, Morelos, 4.4 mi E Cuernavaca, 27–29.VII.1976 (at light) (Peigler, Gruetzmacher, R. & M. Murray, Schaffner). 2♂♂, 1♀, Morelos, 15.1 mi E Cuernavaca (R. R. & M. E. Murray). 2♂♂, Aguascalientes, 5 mi E Calvillo, 10.VII.1983 (black light) (Kovarik, Harrison, Schaffner). 1♀, Colima, 9 mi NE Comala, 18.VII.1983 (at light) (Kovarik, Harrison, Schaffner). 2♂♂, 5 mi SW C. Victoria, Tamps, 1,100 ft, 10.VI.1963 (Duckworth & Davis). 1♀, Taxco, Guerrero, 14.II.1962 (D. G. Denning). 1♂, Oxacaca, 9 mi N C. Loxicha, 15–16.VII.1973 (Mastro & Schaffner). 1♂, Mich. Tuxpan, 7–8.VII.1965 (Flint & Ortiz). 1♂, Real de Arriba, Temescaltepec, 23.V.1933 (H. E. Hinton & R. L. Usinger). 17♂♂, 19♀♀, Cuiteco Chih., 27.VIII.1969 (T. A. Sears, R. C. Coacher, C. S. Glaser). 1♀, L. Cal., 20 mi S Santo Thomas, 3.VIII.1938. 1♀, Son., Guasaremos Rio Mayo, 30.VII.1935 (L. G. Gentner). 5♂♂, 8♀♀, Las Minas, Vera Cruz, 1,360 m, 6.IX.1977 "noct." (H. Brailovsky). 3♂♂, same except (E. Barrera). 2♂♂, 1♀, Tepoztlan, Morelos, 20.II.1977 (E. Barrera). 1♂, Guanajuato, Guana Juato, 20.XII.1981 (H. Brailovsky). In American Museum of Natural History, California Academy of Sciences, California Department of Food and Agriculture (Sacramento), Instituto de Biologia, Universidad Nacional Autonoma de Mexico, United States National Museum, University of California (Berkeley), University of California (Davis), University of Connecticut, Texas A&M University, P. D. Ashlock, H. Brailovsky, and J. A. Slater collections.

Ozophora angustata Barber

Ozophora angustata Barber, 1948:202–203.

Discussion. Both *angustata* and *depicturata* are relatively elongate, slender insects and are almost completely pale yellow in color. They may be readily separated by the condition of the lateral margins of the anterior pronotal lobe. In *O. angustata,*

these lateral margins are narrowly but acutely carinate whereas in *depicturata* they are obtusely ridged (or "calloused") as they are in most species of *Ozophora.* The head of *angustata* is also distinctive. Not only is it more strongly convex on the vertex but the length of the head anterior to the eyes is twice the length of an eye whereas in *depicturata* it is only 1¾ times the eye length.

The holotype (and only known specimen) is submacropterous. The membrane is well-developed but extends only over the anterior ⅔ of abdominal tergum seven. This submacroptery may account for the much narrower pronotum of *angustata* but will not account for the sharply carinate rather than "calloused" lateral pronotal margins. Length-width *angustata* 0.98–1.26 (ratio 1.29); length-width *depicturata* (male paratype), 1.12–1.66 (ratio 1.48).

Barber's excellent original description requires a few modifications. He stated that only two fore femoral spines are present but there are four. His statements concerning labial length may be a little misleading as the head of the holotype is somewhat exerted. Barber stated that the labium extends "just past posterior coxae" which is true. However, with the head in "normal" position the labium probably extends well over the second visible sternal segment. This also suggests that the first labial segment may reach the base of the head rather than only slightly beyond the posterior margin of the eye as stated by Barber. Measurements of the holotype are as follows: Length head 1.06, width 0.86, interocular space 0.52. Length pronotum 0.98, width 1.26. Length scutellum 0.72, width 0.58. Length claval commissure 0.96. Midline distance apex clavus-apex corium 1.20. Midline distance apex corium-apex membrane 0.50. Midline distance apex membrane-apex abdomen 0.86. Length labial segments I 1.10, II 1.14, III 1.02, IV 0.50. Length antennal segments I 1.06, II 2.42, III and IV missing (Barber's original description states that segment IV is slightly longer than segment II). Total body length 6.40 (Barber says 7.65).

This must be a very rare or localized species as despite a considerable amount of material available from Texas it remains known only from the holotype from "Big Bend Park, Brewster Co., Texas."

Ozophora consanguinea (Distant)

Davila consanguineus Distant, 1893:395.
Ozophora consanguinea Uhler, 1894:186–187.
Peggichisme consanguinea Sweet, 1967:223.
Ozophora consanguinea Slater, 1983:25–26.

Discussion. This is a large variegated species readily recognizable by the acute explanate lateral margins of the pronotum. It is closely related to *unicolor* Uhler, much more so, in my opinion, than is *unicolor* to *Balboa ampliata* (see discussion of latter) despite the similarity in color of the two latter species. Both *consanguinea* and *unicolor* have acute lateral pronotal margins that are deeply sinuate, elongate posteriorly curving metathoracic scent gland auricles and prominent white annuli on the fourth antennal segments.

Ozophora consanguinea was synonymized with *picturata* Uhler by Van Duzee (1916) but resurrected by Sweet (1967) at the same time that he raised *Peggichisme* Kirkaldy from synonymy. Ashlock and Slater (1982) concluded that the acutely sharpened pronotal margin was too variable a feature to warrant its use for generic recognition and reduced *Peggichisme* to junior synonymy with *Ozophora.*

Ozophora consanguinea was first reported from the United States by Slater (1983) based on Texas specimens from Laredo, Dimmit Co., Winter Haven, Cameron Co., and Harlingen.

This species is quite variable in color and may represent a complex of closely related taxa. Sweet, in fact, has placed labels on two of the Texas specimens indicating he believed they represent a new species. I have examined a long series extending from Mexico through Central America, and into northern South America. Texas specimens have chiefly dark brown hemelytra with two large pale yellow macula on each corium, one at the level of the claval commissure, the other at the level of the middle of the apical corial margin. Most Central American specimens are paler, some as pale as *picturata*. However, there are many gradations between and we have examined specimens as dark as those from Texas from Belize, Guatemala, El Salvador, Panama and Mexico.

Ozophora maculata Slater and O'Donnell

Ozophora maculata Slater and O'Donnell, 1979, 52:167–170.

Discussion. This is a very small species (less than 4 mm) and readily separable from all other southwestern United States species by size alone. It usually has a complete transverse corial fascia but this fascia may be reduced or absent.

The original description of *maculata* included records of specimens from Santa Cruz and Nogales, Arizona.

Material examined. ARIZONA: 1♂, Duncan, 21.VII.1956 (swept alfalfa) (T. Dees). 1♂, Patagonia Sta. Cruz, 9.VIII.1956 (C. W. O'Brien). 1♂, 1♀, Patagonia. BAJA CALIFORNIA: 1♀, Triunfo, 7.VII.1938 (Michelbacher and Ross). In California Academy of Sciences, P. D. Ashlock and J. A. Slater collections.

Ozophora unicolor Uhler

Ozophora unicolor Uhler, 1894, (2):4:242–243.

Discussion. This species was originally described from two localities in Baja California, Mexico (San Jose del Cabo and Cape Lucas). Despite statements of "California" by Lethierry and Severin (1894), Banks (1910), Van Duzee (1916, 1917, "?") and Torre-Bueno (1946) the species apparently remains known only from Baja California and appears to be endemic there.

In his original description Uhler did not designate a holotype but stated in the introduction to the article that the types of species described in that paper were deposited in the California Academy of Sciences. All of the specimens of *unicolor* at present in the California Academy collections bear much later dates (1938 and 1941). In the National Museum of Natural History (USNM) in Washington are 5 female specimens all labeled "P. R. Uhler collection." Four of these bear the locality "L Cal.," one of these has a red label saying "Type No. 25857 USNM" and an additional label in Uhler's handwriting saying "*Ozophora unicolor* Uhler." The other three specimens bear similar red labels but with the notation "Paratype." The fifth specimen also bears red paratype and Uhler collection labels, but the locality label reads "Cap St. Lucas." It seems evident that despite Uhler's statement, the types were not returned to the California Academy of Sciences and the Washington material is the type series. Despite the label, no valid "type" has been fixed. The specimen bearing

the label "type" as described above is here designated as Lectotype. The other "paratypes" become paralectotypes.

O. unicolor is a very distinctive species. It is almost entirely dark brown, including the entire membrane. There is a contrasting yellow stripe along each lateral corial margin and along the inner margin of each clavus. The first and second antennal segments are dull yellow as is most of the third segment. The latter is infuscated on the distal end. The fourth segment is chocolate brown with a broad subbasal white annulus.

O. unicolor appears to be most closely related to *consanguinea.* It shares with that species the sharply carinate, deeply sinuate, and explanate lateral pronotal margins, and the elongate tapering posteriorly curving metathoracic scent gland auricle. Other descriptive features are as follows: (measurements from lectotype) Head short, moderately declivent; vertex strongly convex; tylus extending anteriorly only to proximal ⅓ of 1st antennal segment. Eyes large, moderately produced. Length head 1.0, width 1.12, interocular space 0.56. Pronotal calli strongly convex, smooth, confluent mesally; lateral pronotal margins only shallowly concave. Length pronotum 1.24, width 2.08. Length scutellum 1.36, width 1.12. Length claval commissure 1.16. Midline distance apex clavus-apex corium 1.72. Midline distance apex corium-apex membrane 1.28. Metathoracic scent gland auricle elongate, acute, strongly curving posteriorly. Labium attaining or nearly attaining metacoxae. Length labial segments I 1.04, II 1.00, III 0.76, IV 0.48. Length antennal segments I 0.84, II 1.72, III 1.44, IV 1.76. Total body length 7.36.

Additional material examined. LOWER CALIFORNIA: 2♂♂, 1♀, Todos Santos, 10.X.1941 (Cross and Bohart). 1♂, 1.38 mi NE of Coomon Du T. S., 9.VII.1937 (R. E., J. V., A. E. Ryckman & D. Spencer). 1♂, 215 km N of La Paz, 11.VII.1957 ("in shoe") (R. E. Ryckman). 3♂♂, 3♀♀, 15 mi N El Refugio, 4.VII.1938 (Michelbacher and Ross). 1♀, 157 km NW La Paz, 11.VII.1957 (R. E., J. V., A. E. Ryckman and D. Spencer). 1♂, Agua Caliente, Cape Region, 18.X.1941 (Ross and Bohart). In P. D. Ashlock, California Academy of Sciences, and J. A. Slater collections.

In the original description Uhler mentioned that the head is broadly grooved along the midline, but the head is actually evenly convex. The apparent groove is merely a paler color marking that is present on some specimens. Uhler also says that the "ground surface" is impunctate. However, actually *unicolor* is as punctate as most other species of *Ozophora.* Later in the description Uhler indicates that the surface is punctate. His statement that antennal segments two and three are equal and that segment four is a little shorter must have been merely based on visual observation and is inaccurate (see measurements above).

Although as noted above, *unicolor* is closely related to *consanguinea,* it is of the same color as the southwestern species *Balboa ampliata* Barber. The relationship may be more than a superficial color resemblance as noted in the discussion of *ampliata.*

Balboa ampliata Barber

Ozophora ampliata Barber, 1918:52–53.
Dieuches occidentalis Torre-Bueno, 1946:126–128.
Balboa ampliata Ashlock, 1960:237.

Discussion. This is a large, almost uniformly dark brown species. In general appearance it closely resembles *Ozophora unicolor* Uhler.

The systematic position is most interesting. Eyles (1969) has summarized its systematic history. He noted that Ashlock (1960) removed it from *Ozophora* to *Balboa* because of the broad lateral pronotal carina and the stridulitrum along the lateral margin of the front wing, and that Torre-Bueno (1946) redescribed it as a new species of *Dieuches.* While it is true that Ashlock used the pronotal carina as one of the distinguishing features, the presence of the stridulitrum along the lateral corial margin is probably of more definitive importance (see Ashlock and Slater, 1982). However, the importance of such stridulatory structures as criteria for generic recognition is certainly open to question. An abdominal stridulitrum is known to have developed independently several times not only within a tribe (Harrington, 1980) but in such different tribes as the Myodochini and Ozophorini. Slater (1983) has suggested that within the Ozophorini the genus *Lygofuscanellus* Scudder recognized on the basis of the abdominal stridulitrum would probably be polyphyletic if all Western Hemisphere ozophorines having this feature were placed in the same genus. He has described a new species of *Ozophora* with an abdominal stridulitrum. In fact the corial margin wing stridulitrum has itself evolved independently several times (Ashlock and Lattin, 1963).

Despite this we believe that *B. ampliata* is best retained, at least for the present, in *Balboa.* It is, however, quite isolated from the other two species of *Balboa* (only *variabilis* Distant and *germana* (Distant) have been described but there are several similar undescribed Central American species). The resemblance of *ampliata* to *Ozophora unicolor* is chiefly one of color. The shape of the metathoracic scent gland auricle is also similar but not more so than that between *B. ampliata* and *B. variabilis. B. ampliata* can be distinguished from *O. unicolor* as follows: (1) *B. ampliata* has the above-mentioned corial stridulitrum. (2) In *ampliata* the explanate lateral margins of the pronotum are evenly, arcuately curved whereas in *unicolor* the lateral pronotal margins are deeply sinuate. (3) *B. ampliata* has a uniformly dark fourth antennal segment, while *O. unicolor* has a broad, subbasal, white annulus present. (4) The metathoracic evaporative area occupies only the inner half of the metapleuron in *ampliata* but covers the inner ⅔–¾ in *unicolor.* (5) The apex of the scutellum is uniformly dark brown and concolorous with the remainder of the scutellum in *ampliata* (occasionally slightly paler) whereas in *unicolor* the extreme apex is usually white. (6) *B. ampliata* is a considerably larger and more robust species.

Nevertheless the overall similarity is such that Barber (who originally described *ampliata*), determined a typical specimen as *Ozophora unicolor.*

In his original description of *ampliata* Barber noted its similarity to *unicolor* and stated that *ampliata* was "generally paler." I have not found this to be true.

Nothing is known of the biology of *ampliata,* but it appears to be a montane species in southern Arizona.

Eyles (1969) gives excellent illustrations of the dorsal surface and of the fore femur.

Distribution. Barber's holotype was from "Arizona" without definite locality, his paratypes are from Carr Canyon, Huachuca Mountains. Torre-Bueno's holotype of *Dieuches occidentalis* was from Madera Canyon, Santa Rita Mountains, Arizona (5,000 ft).

Material examined. ARIZONA: 1♂, 5 mi W Portal (S.W.R.S.), 5,400 ft, 15.VII.1956

(C. and M. Cazier). 1♀, same except 23.VIII.1956 (M. Cazier). 2♂♂, 1♀, SW Res. Sta., 2.VIII.1956 (M. J. Westfall Jr.). 1♀, Santa Catalina Mts., 5,000 ft, VII.1938 (Bryant). 2♂♂, 4 mi SW Forestdale, 23–24.VIII.1952 (pine forest) (H. B. Leech). 1♂, Pine, 3.IX.1937 (R. P. Allen). 2♀♀, Show Low, Navajo Co., 21.VIII.1952 (B. Malkin). 1♀, Cochise Co., 5 mi W Portal, 26.VIII.1976 (black light) (Fred G. Andrews). 1♀, Cochise Co., 12 mi S Sierra Vista, 8–10.VIII.1977 (R. P. Allen, G. C. Duffy). 4♂♂, 6♀♀, Cochise Co., San Rafael Valley, 10–11.VIII.1977 (black light) (R. P. Allen & G. C. Duffy). 1♀, Cochise Co., Rustler Park, 25.VII.1982 (Fred G. Andrews). 1♂, Pima Co., Madera Canyon, 6.IX.1970 (E. A. Kane). 2♂♂, 3♀♀, Santa Cruz Co., Madera Canyon, 22.VIII.1971 (black light) (E. A. Kane). 4♂♂, 5♀♀, Gila Co., Pinal Mts. 5,500 ft, 13–15.VIII.1977 (black light) (R. P. Allen, Duffy). NEW MEXICO: 1♂, Bear Trap Camp, 28 mi SW Magdalena, Socorro Co., 8,500 ft, 20.VII.1964 (F. P. and M. Rindge). In American Museum of Natural History, California Academy of Sciences, Texas A&M University and J. A. Slater collections.

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